

STAFF

Bradford Daggett, Director
Matthew V. Mahoney, Admin., Development
Charles H. Saville, Admin., Research
Alfred B. Peticolas, Dean
Mario C. Laguzzi, Member of Technical Staff
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REGISTRATION INFORMATION

Seminars will be limited in size. Registrations will be accepted in the order received. Substitution of applicants may be made at any time. Cancellation of registration will be honored and fee refunded provided notification is received no later than one week prior to the seminar. Registration fee includes attendance, luncheon, coffee break, and a complete package of reference material. Reference material will be issued at the opening session. Telephone answering service is provided during seminar hours.

HOTEL ACCOMMODATIONS

RCA Institutes has reserved a block of rooms in each seminar hotel. Hotel room is not included in the registration fee. Additional hotel information will be forwarded with your confirmed reservation. Please arrange room accommodations directly with the hotel, with reference to RCA Institutes' seminar.

OTHER SEMINARS IN COMPUTER TECHNOLOGY INCLUDE:

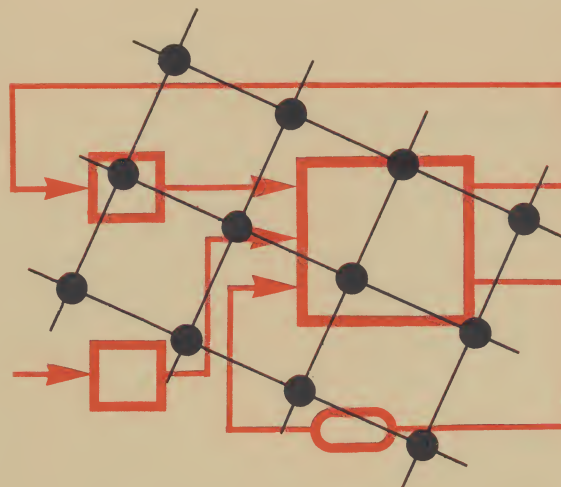
Logic Design Digital Electronics
Digital Communications



RCA INSTITUTES, Inc.

A Service of Radio Corporation of America
School of Custom Educational Programs

49 West 45th Street
New York, N. Y. 10036
Area Code 212, 247-5700



RCA INSTITUTES Announces A Five-Day Seminar—

DIGITAL SYSTEMS ENGINEERING

Digital Systems Engineering

INTRODUCTION

DIGITAL SYSTEMS ENGINEERING is one of a series of seminars on modern technology presented by RCA Institutes. This program has been developed for engineers and other technical personnel entering the challenging new areas of system refinements. Its primary objective is to provide participants with theory and practical up-to-date design procedures for the major units of digital systems.

SCOPE

This seminar will begin with a development of simple but powerful methods of single and multiple function design based on the use of designation numbers. Following this, procedures for the generation, encoding and storage of digital data will be explored. Solutions to typical problems of interface and internal computer organization will be given. Finally, methods of internally processing digital information will be presented. Special emphasis is placed on data flow and the logic construction of arithmetic, memory and control units.

PREREQUISITES

The minimum requirements are a baccalaureate degree in mathematics, engineering or physics, or the equivalent. Experience in switching circuits or digital systems may be substituted. Prior attendance at RCA Institutes' Logic Design seminar will be helpful but is not essential.

PRESENTATION

Members of the School of Custom Educational Programs will present this program of concentrated study using a unique cross-fire teaching technique designed to motivate the participant.

This seminar has been developed through extensive field research by the School of Custom Educational Programs in consultation with RCA Institutes' Board of Technical Advisers, representing various technical, research and educational activities of the Radio Corporation of America and its subsidiaries.

SEMINAR OUTLINE

FIRST DAY

BASIC DESIGN AND HARDWARE

Review of designation numbers; NAND/NOR design; standard logic packages; Type RS, D, T, and JK flip-flops.

SECOND DAY

GENERATION OF THE SIGNAL

Ripple and parallel counter design; the operational amplifier; hybrid operations; analog-digital conversion methods.

THIRD DAY

ENCODING AND DATA HANDLING

Sampling theory; error detecting and correcting codes; applications of shift registers; binary sequence generation.

FOURTH DAY

THE CENTRAL PROCESSOR

Logic solutions to interface problems; internal computer organization; the control unit; designing control functions.

FIFTH DAY

ARITHMETIC AND MEMORY SYSTEMS

Random access memory logic; disc memory logic; serial arithmetic operational parallel and high speed processing.

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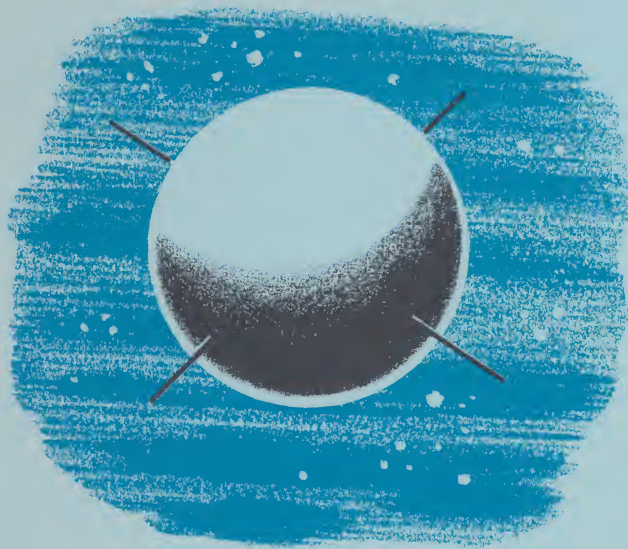
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RCA INSTITUTES
Announces
A Five-Day Seminar—

**DIGITAL
COMMUNICATIONS**

Digital Communications

INTRODUCTION

DIGITAL COMMUNICATIONS is one of a series of seminars on modern technology presented by RCA Institutes. This program has been developed for engineers and other technical personnel who must design or specify the digital sections of a data transmission system. Its objective is twofold: to provide an understanding of the capabilities and limitations of contemporary digital communications techniques and to impart practical design criteria for the digital hardware at either end of the data link.

SCOPE

Contemporary digital techniques make it possible to communicate reliably through an 80 decibel excess of noise, or to construct a narrow-band transmitter without using tuned circuits. Such techniques are explored and developed, using a "black-box" approach which permits a wide application of the methods presented. Special emphasis is placed on applications of information theory, and on the utilization of shift registers and counters.

PREREQUISITES

The minimum requirements are a baccalaureate degree in mathematics, engineering, or physics or the equivalent. Experience in systems engineering may be substituted.

PRESENTATION

Members of the School of Custom Educational Programs will present this program of concentrated study using an unique cross-fire teaching technique designed to motivate the participant.

This seminar has been developed through extensive field research by the School of Custom Educational Programs in consultation with RCA Institutes' Board of Technical Advisers, representing various technical, research and educational activities of the Radio Corporation of America and its subsidiaries.

SEMINAR OUTLINE

FIRST DAY

THE BASEBAND SIGNAL

Introduction to modern data transmission; multiplexed and sampled-data systems; typical baseband signal spectra; applications of sampling theory; analog/digital conversion requirements.

SECOND DAY

INFORMATION THEORY

Information, symbols and entropy; channel capacity; noise vs. information; applying information theory to digital engineering; error probability; error detection and correction; orthogonal codes.

THIRD DAY

MODULATION TECHNIQUES

Modulation I: AM, FM, PM; carrier suppression and SSB; FM/FM and hybrid modulation. Modulation II: pulse code modulation; FSK and variations of PSK; writing 1's and 0's; n-ary transmission.

FOURTH DAY

OPTIMIZED TRANSMISSION

Pseudo-random sequences; sequence generation with shift registers; pseudo-noise modulation; correlation methods; ranging and phase locking; signal averaging and integration.

FIFTH DAY

DIGITAL TECHNIQUES

Multiplex systems design; digital filters; digital frequency synthesis; untuned narrow-band systems; synchronization; coherent communications systems.